

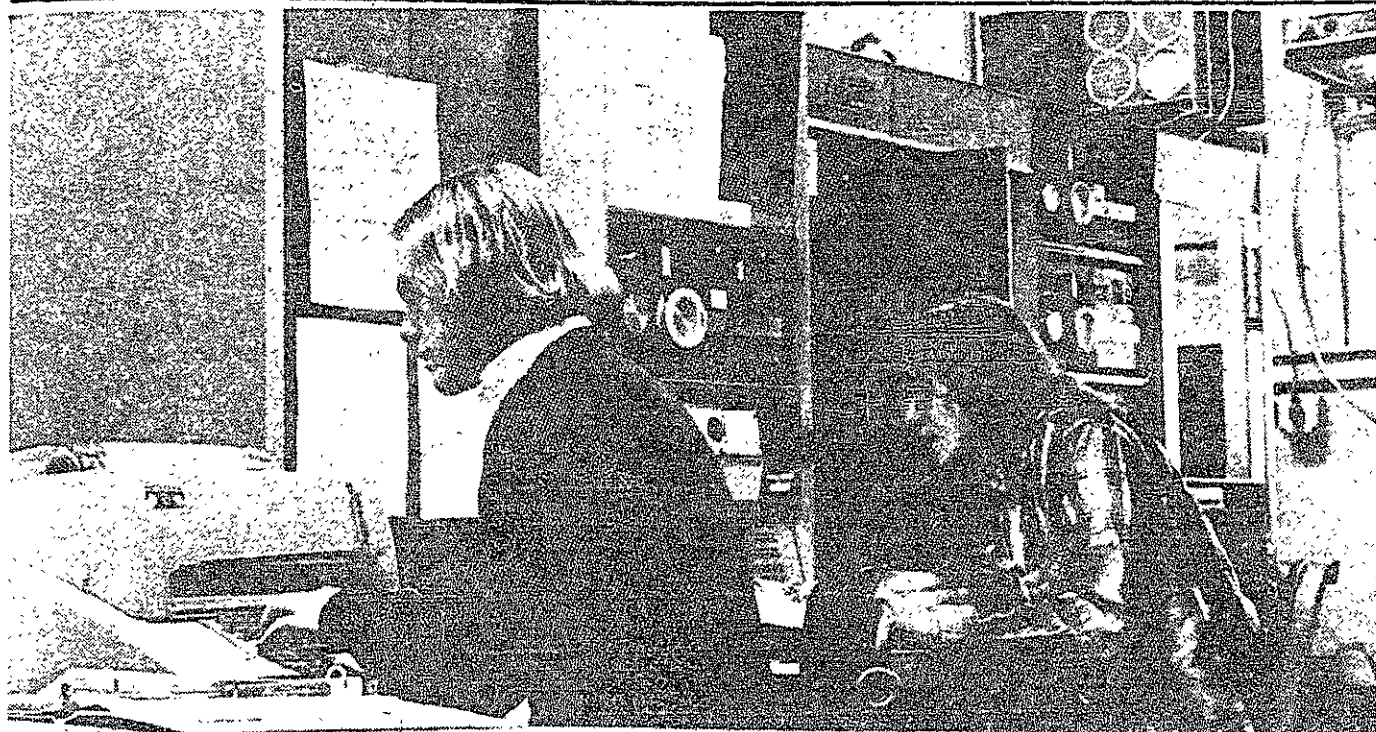
The Tech

VOLUME 92 NUMBER 53

MIT, CAMBRIDGE, MASSACHUSETTS

FRIDAY, DECEMBER 8, 1972

FIVE CENTS



The Educational Research Center is one of several groups at MIT conducting research in education. In this picture, two students are using a PDP-7 computer in the ERC Computer Center.

Photo by Roger Goldstein

Chinese conclude visit with stopover at MIT

By Norman D. Sandler

A delegation of seven scientists from the People's Republic of China left Boston Wednesday, after a four-day visit, during which they toured educational and scientific research facilities in the area.

The group, which arrived last Saturday, visited Harvard University on Monday and Tuesday came to MIT, where they were officially greeted by President Jerome B. Wiesner, Chancellor Paul Gray, Provost Walter Rosenblith, and their designated Boston area host, Professor Victor Weisskopf, Chairman of the Department of Physics.

During their visit to MIT, the delegation split into three groups and visited on-going research as well as faculty members and graduate students in biochemistry, engineering, and physics.

Professor of Biochemistry John M. Buchanan, who accompanied the scientists as they visited with members of the Biology Department, commented that the discussions they had were "very lively," and that there was "great inter-action" between the Chinese and the Americans.

Buchanan also stated that during all of the discussions, there was "extreme friendliness and a willingness to talk on all levels, and a lack of suspicion and fear which is usually the case with many visiting foreign

scientists."

Weisskopf, when questioned on the progress made during the discussions on Tuesday, also said that the Chinese were "unusually open people... and much less formal than foreign scientists usually are... a warm, personal, informal visit."

The delegation came to Boston as only a part of a six-city tour of the United States, though they have already been touring for two months through England, Sweden, Canada, and the US.

The visit to the US was arranged through the State Department, the American Academy of Arts and Sciences, and the National Academy of Sciences' Committee for Scholarly Communication with the People's Republic of China, of which Weisskopf and Wiesner are both members.

Heading the delegation of specialists in biochemistry, high-energy physics, computer science, chemistry, and jet propulsion, was Dr. Pei Shih-Chang, 71 year-old Director of the Institute of Biophysics at the Chinese Academy of Sciences. Deputy Head of the Delegation was another member of the Presidium of the Scientific and Technological Association of China (along with Pei), Mr. Pai Chieh-fu.

The delegation also included the five other scientists.

City starts sticker program

By Lee Giguere

Students whose cars are not registered in Massachusetts will not be able to obtain resident parking permits under a "resident sticker program" now being tested in a section of Cambridgeport near the BU Bridge.

The program, which was put into effect on December 1, requires that all cars parked in the area have a resident parking sticker; all other cars will be tagged with a five dollar fine.

According to an information sheet prepared by the Cambridge Department of Traffic and Parking, "No resident-student, military, businessman, long-term resident may have a sticker unless his motor vehicle is registered under Chapter Ninety of the Commonwealth of Massachusetts in the City of Cambridge."

"Parking stickers," according to the Department release, "will be issued to anyone whose motor vehicle is registered under Chapter Ninety of the General Laws of the Commonwealth of Massachusetts in the City of Cambridge when he presents his automobile registration (displaying his address) to the Department of Traffic and Parking." There will be a one dollar fee per sticker to "help the City of Cambridge in the cost of the stickers and other material needed to implement this program."

Lauren Preston, a traffic engineer in the department, explained that it was his understanding that students with out-of-state license plates are barred from obtaining stickers even if they have filed a statement with the police regarding their operation of a motor vehicle in the state. City Solicitor Edward McCarthy, also questioned on the matter, explained that Chapter 340 of the Acts of the Massachusetts Legislature, 1972 require that a car be "registered" under Chapter 90 and as being "principally garaged" in the area for which the resident sticker is sought. Section 3 of Chapter 90, which requires students to obtain stickers for their cars, distinguishes between "registration" and filing a "statement" with the local police concerning the operation of an out-of-state vehicle in Massachusetts for more than 30 days.

The area where the trial is being conducted, according to Preston, is a "purely residential

one" with limited off-street parking. An effective 24-hour no-parking zone is established by the regulation on the following streets: Acorn St. from Putnam Ave. to Chestnut St., Chestnut St. from Pleasant St. to Brookline St., Florence St. from Pleasant St. to Magazine St., Glenwood Ave. from Magazine St. to Brookline St., Granite St. from Magazine St. to Brookline St., Hastings Sq. from Chestnut St. to Henry St., Henry St. from Brookline St. to Pearl St., Magazine St. from Putnam Ave. to Granite St., Newton St. from Putnam Ave. to Chestnut St., Pearl St. from Putnam Ave. to Granite St., Pleasant St. from Putnam Ave. to Florence St., Tufts St. from Magazine St. to Pearl St., Whitney Ave. from Chestnut St. to Putnam Ave. The resident sticker exempts a car owner from the parking ban.

John W. Bidwell of the MIT Planning Office told *The Tech* that some 1500 MIT students (undergraduates, graduates, and specials) live in private housing in Cambridge. He noted that the "largest concentration" is in the area represented by Zip Code 02139, the area in which the resident parking sticker program is being tested is a "small proportion" of the Zip Code 02139 area. "It is safe to say," Bidwell concluded, "that there are a number of students who live in the area."

More detailed information was available from Dexter Kamilewicz of the MIT Real Estate Office and Northgate Project Manager, who reported that Northgate has seven holdings in the affected area: at 116 and 124 Chestnut St., at 97-101 and 392 Henry St., at 154-158 Magazine St., at 314 Pearl St., and at 1 and 2 Pearl St. Place. All of the properties except the Magazine St. units, Kamilewicz said, have off-street parking available. He added there are people from MIT at all the addresses, and knew for certain that there are students at Magazine and Pearl Sts. Kamilewicz predicted that five or six apartments would probably be affected by the regulation, with problems most likely to occur at Magazine St. He emphasized that he would be glad to help any students who have difficulties with the regulation.

Pi Kappa Alpha, an MIT fraternity, also lies within the test zone. A call to the house re-

vealed that no one there had as yet had any difficulties with the parking ban, nor had anyone applied for the sticker. PiKA, however, has a garage and parking lot.

Preston stated that his department "recognizes that there are a lot of problems with the program." Their job, he said, will be to "try to document the problems," and then find a way for the program to work. He emphasized that the resident sticker parking regulation was still a "test program."

Committee views education

By Ken Davis

The MIT Education Division Steering Committee has begun exploring methods of improving the educational process. The committee, named last September by President Jerome B. Wiesner, is chaired by W.T. Martin, Professor of Mathematics.

Martin described the purpose of the Steering Committee as twofold, oriented towards curriculum development and research. For example, the committee plans to investigate the effect of a new text or teaching method on both the student and the institution, as well as the effect the type of institution has on the way a course is taught. For example, Professor William Perry of Harvard University studied how examination in subjects has changed over the last 70 years. A similar study may possibly be made at MIT, comparing not only early and later exams in subjects, but contrasting the general course ap-

proach between an engineering and liberal arts university.

Martin stressed that the Education Division will not have a monopoly on curriculum developments or educational experimentation, but will work with the departments, leaving them independent.

In the future, it is planned tentatively to have students in the Division, which would offer a degree program. Decisions must then be made as to whether to hire outside people, or to use current faculty members in the Division. This program will not, however, be a major focus of the Division.

One important decision the Steering Committee must make is what the general foci of their research are to be. The key to the approach will be an interconnectivity, with research from all viewpoints being coordinated so as to profit best from each other. Each step in planning will be taken with this goal in mind.

The Steering Committee has four sub-committees: Human Science, chaired by Dean for Institute Relations Benson R. Snyder; Education Technology, chaired by Professor of Engineering Wilbur Davenport, Director of the Center for Advanced Engineering Studies; Education Division Colloquium, chaired by Lotte Bailyn, Associate Professor of Organizational Psychology and Management; and Academic Programs, chaired by Martin.

The Human Sciences subcommittee is currently working on the problem of coordinating research from several different angles. Dean Snyder stated that his subcommittee would start working on a small scale to allow for better cooperation.

"Our main purpose," said Snyder, "is to look at the learning process from a range of perspectives. The presence of good people would be able to, by dialogue with the faculty, give them a more sensitive appreciation of what to do." He emphasized, however, that the Division is not an arm of the administration aimed at making education different.

Snyder stated that, though the Human Sciences subcommittee is still in a planning stage, it went through the exercise of designing a course curriculum, basically to get a clearer focus on its goals.

The Education Technology subcommittee will take a similar approach to studying the problems involved in applying technology to the learning process. According to Davenport, the subcommittee's main activity so far has been to bring together people at MIT who are working on problems along this line. Among these are Professor Samuel Pappert, who is working in the field of artificial intelligence, John F. Rockart of the Sloan School, and J. Francis Reinjes, Director of the Electronics Systems Lab.

Davenport feels that by the end of the spring term, the subcommittee will be ready to perform some sort of experiment directly concerned with undergraduate education, although the exact nature of the experiment has yet to be determined.

The Academic Programs subcommittee is working on planning two subjects to be offered for credit by the Division for the spring term. The general (Please turn to page 5)

APOLLO 17

According to Draper Labs, the delay in the Apollo 17 liftoff Thursday morning has resulted in a similar delay of about two hours and 40 minutes for all activities. That would place Lunar orbit insertion at approximately 5:30 pm, 12/10; Lunar touchdown at 4:30, 12/11; first EVA at 9 pm, 12/11; second EVA at 7:30 pm, 12/12; third EVA at 7 pm, 12/13; LM liftoff from Moon at 8:30 pm, 12/14; departure from Lunar orbit at 9 pm, 12/16; and splashdown in the Pacific Ocean at about 5 pm, 12/19. See story describing mission, page 6.

NOTES

* The Admissions Office would like you to visit your high school during Christmas vacation or IAP. Your impressions of MIT can be helpful to students making their own college plans. The Admissions staff will be reserving the time from 2-4 pm on December 14 especially to talk with you about any questions you might have. We'd be glad to supply material and information. Stop by 3-108 and see your staff area representative.

* On Sunday, December 10 at 3 pm, there will be a service in the MIT Chapel to install Miss Constance Parvey into her new position of Lutheran chaplain at MIT. Miss Parvey is Assistant Minister at the University Lutheran Church in Harvard Square. All who are interested are invited to attend. There will be a reception in McCormick Hall after the service.

* Wellesley-MIT Exchange, Spring 1973: Information and applications available in Exchange Office, 7-101, and Information Center, 7-111. Applications due: Thursday, December 21.

* The Education Division Colloquium will present "Cross-Cultural Perspective on Intellectual Development" by Dr. Jerome Kagan of the Department of Psychology and Social Relations at Harvard University on Wednesday, December 13 at 12 noon in Room 9-150. The lecture is open to the public.

* POT LUCK COFFEEHOUSE—Live entertainment every Friday and Saturday night, 8:30 pm to 12 m. Mezzanine Lounge of Student Center. Free coffee, cider and doughnuts. Performing this week: Friday: Peter Kairo; Saturday: Bob Klein, Jossie De Guzman, and Leon Riuchun.

* The Student Center Committee presents THE MIDNIGHT MOVIE SERIES, every Friday night at 12 in the Sala de Puerto Rico. Admission FREE! MIT of Wellesley ID required. This week: Whatever Happened to Baby Jane?

* A \$10 late payment fine will be assessed on all student accounts showing a past due balance for the Fall Term remaining unpaid as of December 15, 1972.

* The MIT Auto Club will have a meeting Tuesday, December 12 in Student Center Room 473. Topics will include an MIT Road Racing Team (we have a Porsche 914-6 GT) and competitive activities for January and February.

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Group decides policy for faculty and staff

By Barb Moore

It is well known that several committees exist to govern the conduct and academic performance of the students of MIT, but few people know who controls the policies of the faculty. The Staff-Administration Committee, one of the standing committees of the Institute, has this responsibility.

The committee is composed of representatives of the faculty and the administration. The faculty members are elected for a three year term, and the members representing the administration are appointed. The current chairman is Electrical Engineering Professor David C. White. A major task of this group is to make policy recommendations regarding faculty behavior.

One of the committee's major problems came about three years ago, when MIT students occupied the President's office. Two

members of the staff, one an instructor and one a professor, participated in this occupation. It was the responsibility of the Staff Administration Committee to develop a policy regarding such action. The committee, at that time under the chairmanship of Mechanical Engineering Professor James Fay, investigated the episode, and a sub-group of faculty members made reports and recommendations concerning what, if any, action should be taken. These recommendations were finally agreed upon by the faculty, after nearly a year of consideration.

Currently, the Staff-Administration Committee is considering problems of some people who have been with the Institute for many years, such as senior lecturers and some researchers, yet have no formal faculty positions. A study is underway to allow these people some sort of faculty status.

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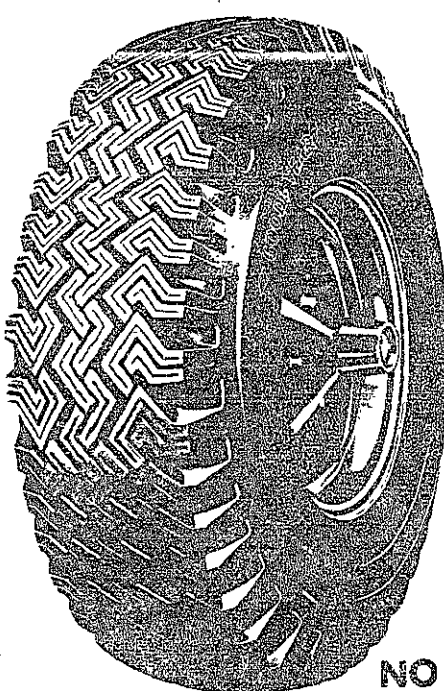
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Subject evaluation to begin

By Lee Giguere

A second Institute-wide subject evaluation is being organized by the Classes of '73 and '74 and TCA; questionnaires for student evaluation of this term's subjects will be distributed today and tomorrow.

Class of '73 President Bob Longair explained that the results from this latest set of questionnaires as well as questionnaires distributed during the spring term last year will be compiled during IAP. The results

of the evaluation will be ready by registration day, Longair predicted.

The survey will be very similar to the "Course Evaluation Guide" which appeared a year ago; the major difference will be that the results will include information from both a spring and a fall term.

The cost of printing the questionnaires and the Guide will be paid out of the proceeds of the Building 7 donut booth, which has been run for the last year by the Class of '73; manpower for compiling the questionnaires will be provided primarily by members of the Class of '74 and TCA with some assistance from the Class of '73.

The questionnaire will consist of three parts: "The Course," "The Teacher," and "Comments," preceded by a brief explanation of the program identifying the sponsors and stating their plan to "pinpoint strong and weak points in MIT's course offerings." Under "The Course" will be questions (asking for a response on a one to five scale) probing the organization and general value of the subject; "The Teacher" queries will emphasize teaching technique. While the "Comments" section welcomes "anything you would like to say," it also prompts personal remarks in five areas: pace, interest, text and lectures, homework, and quizzes. The questionnaire also asks the student to identify his year and major as well as the subject and his instructors.

Reaction to last year's publication, which evaluated "exactly 200 courses," was mixed. Faculty members in particular were concerned that the "sample" it presented was biased since the returns were on a voluntary basis. Students criticized the Guide on two counts: that it came out too late (on Registration Day) to be useful, and that many of the subjects it evaluated were only offered first term. While it appears that this year's Guide will still be subject to the first objection, Longair pointed out that since it will be based on data from both terms, the spectrum of courses covered should be broader.



Workmen prepare the Christmas tree that stands in front of the Student Center. There are only 14 shopping days left until Christmas.
Photo by Roger Goldstein

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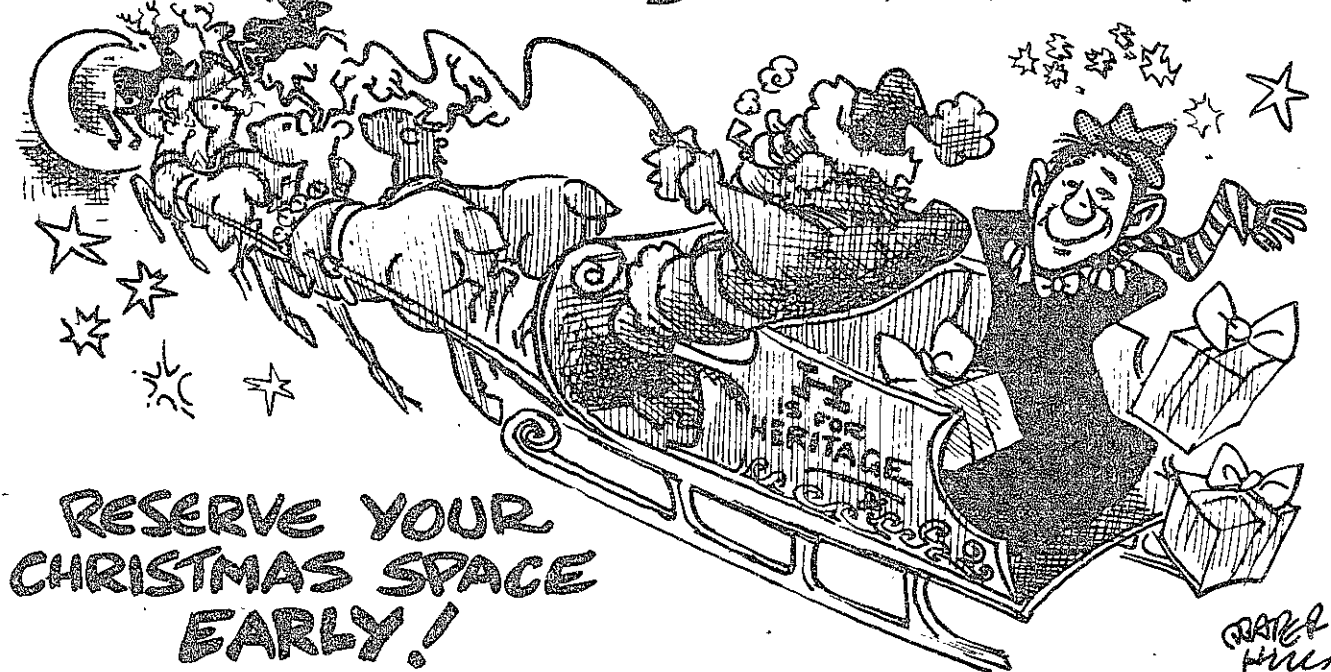
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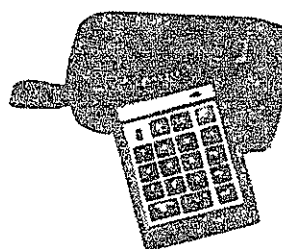
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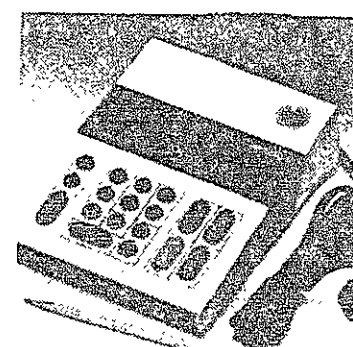
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MIT STUDENT CENTER

Press freedom: on the brink of death?

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"A cantankerous press, an obstinate press, an ubiquitous press must be suffered by those in authority in order to preserve the even greater values of freedom of expression and the right of the people to know." So reads Federal District Court Judge Murray L. Gurfein's decision in the case of the United States Government vs. *The New York Times* (the Pentagon Papers Case).

Today neither those in authority nor those over whom they have authority appear to be in a mood to suffer an enthusiastic press.

In times of stress, people apparently are willing to forfeit some of their rights as long as they do not feel an immediate effect. The governors in today's society are playing off one group of the governed against another in a never ending round of attacks on basic civil liberties. The destruction of what traditionally was deemed to be a reporter's First Amendment right to keep his sources confidential is but one small fragment of this erosion (c.f. the Supreme Court decision in the Caldwell case). Potentially, this encroachment on the rights of a free press could be more disastrous than other losses in the area of civil liberties. It is on accurate information that a society of self governed people must rely in order to form political judgments about those to whom it has given power.

"Only a free and unrestrained press can effectively expose deception in government. And paramount among the responsibilities of a free press is the duty to prevent any part of the Government from deceiving the people and sending them off to distant lands to die of foreign fever and foreign shot and shell. . . . In revealing the workings of government that led to the Vietnam War, the newspapers nobly did precisely that which the founders hoped and trusted they would do." Thus wrote the late Associate Justice of the United States Supreme Court Hugo Black in his concurring opinion on the Pentagon Papers case.

However just because *The New York Times* and later *The Washington Post* and other papers were the beneficiaries of Dr. Ellsberg's largesse, disregarded the advice of their corporate lawyers and published the Pentagon Papers, this does not excuse them from previously misinforming their readers about the American involvement in Vietnam. It was not one news organization alone but all of them together who share the responsibility for their unquestioning dissemination of several Administrations' canards.

Alexis de Tocqueville's observation about the United States press is as true now as when he originally made it in the 1800's: "In the United States each separate journal exercises but little authority, but the power of the periodical press is second only to that of the people."

Just as it was the monolithic facade presented by the press which initially misled the American people about Vietnam; it was the battle reportage of this same press which started to switch public sentiment about the war.

The same news media faults which led to the unthinking acceptance of the Government's assertions in the Sixties are, however, still prevalent. Until and unless these abuses are corrected, it will still be possible for the Government to deceive the people and send them off to die of "foreign shot and shell."

To this day, television news broadcasters are more interested in putting on a good show than penetrating the fog emanating from Washington. These performers must belong to the American Federation of Television and Radio Artists (AFTRA) (i.e., they are primarily performers and secondarily journalists). Unfortunately, better than half of the US population receives its main news reports from the nightly network newscasts. Thereon they see the comforting visages of Walter Cronkite, John Chancellor, Harry Reasoner, and Howard K. Smith doing their thinking for them.

A prime recent example of these men, and indeed the vast majority of the Washington press corps, succumbing to the Administration's press agency was the reaction to the virtuoso "Peace is at hand" performance by National Security Affairs advisor Dr. Henry A. Kissinger on October 26, 1972. The immediate reaction of those members of the working

press assigned to cover the announcement about the peace negotiations was that at least the Vietnam War would be ended. All of the nationally-known commentators believed Dr. Kissinger's cant because of the outstanding public relations efforts of the White House with respect to Kissinger during the first Nixon Administration. Only after the deadline of October 31 passed did columnists begin to question the announced accords which left to further negotiations all that the parties had been fighting about for many years.

Like any group of people settled in their ways with a vested interest in the status quo, newspeople do not want to rock the boat. There are precious few who are willing to ask a difficult question at a White House press conference. This attitude also carries over to the media managers.

There is a breed of writers known as Washington columnists. Vital to the maintenance of this title is a Washington outlet (i.e., the appearance of their columns in either of the two major Washington papers, *The Washington Post* or *The Washington Star-News*). Thus, even when the columnists have made grievous errors of fact in their columns and grossly misrepresented the truth, as many did this spring, editors are reluctant to remove the offending columnists from their editorial page, because to deprive a Washington columnist of his Washington outlet would be to deprive him of his sustenance. (Papers outside Washington presumably would not publish a column which was not appearing in a Washington paper.)

The big names in the field of broadcast journalism (the men whose word is accepted as the truth by better than half the populace) are afraid to ask the tough question because they want to continue in the good graces of their sources. An incident which occurred during the Wisconsin primary this spring illustrates this phenomenon.

The Saturday before the election, *The New York Times* released a story to the effect that radio time was purchased for Senator Henry M. Jackson (D-Wash.) by an employee of the Boeing Company using Boeing expense account money. This correspondent was present when Sen. Jackson, in whose home state Boeing is headquartered, was questioned by a man who anchors a national nightly network news show. The anchorman asked one perfunctory question ("What about it, Scoop?" in a tone of voice that the whole matter was rather ridiculous so why don't you just say so and we'll all go and get a good stiff drink.) Scoop said he did not have prior knowledge that the Boeing employee had purchased the time. Jackson maintained that it was an insignificant matter because the amount of money involved was only several hundred dollars. Upon hearing Jackson's response, the network newsmen slapped Scoop in the knee, laughed it off, and closed his notebook. He looked slightly perturbed when this correspondent dug a little deeper to inquire as to why a Boeing engineer should be advanced in excess of \$500 for a trip from Seattle to Boston. This network performer, who is respected and accepted by millions of Americans, wanted to remain on the good side of Scoop Jackson in the unlikely event that Jackson's candidacy bore fruit. Thus, he was unwilling to ask a potentially embarrassing question.

The mass media today, with a few notable exceptions, are more interested in filling either space or time rather than in delving into matters of public interest. The examples of these abuses are rife.

Congressional hearings are circuses set up by and large with a preconceived notion of what will be proven during the course of the hearings. Only witnesses who will reinforce the preconceived notion or add to the weight of testimony supporting it are called before committees. Yet most nights network news shows devote time to these carefully staged events.

The media do not analyze technical or complex issues but merely report the various sides to the argument. It is true that reporters are supposed to report. However, in the space that the media provide for news analysis, it would be salutary if they were to perform their own analyses rather than relying on the protagonists in a debate. Just as the

average of two incorrect answers to an arithmetical exercise is not necessarily the truth, the sum of two falsehoods is not necessarily the truth. Particularly in highly technical public policy areas, the media should retain their own consultants, free of outside constraints; instead the media rely, for their analytical arguments, on those with a vested interest in the matter at hand whether it be a Pentagon general seeking to procure a new weapons system or an environmental group protesting the construction of a new atomic energy plant.

In many crowd scenes during the tumultuous demonstrations of the Sixties, the fundamental truth of the Heisenberg Uncertainty Principle was evident. As any good quantum mechanic worth his monkey wrench knows, the process of measuring something distorts the measurement. The process of filming or covering an event distorts what is happening if only to cause the organizers of the event to focus their attentions on the media. This autumn the McGovern campaign thrashed furiously around the country during September attempting to hit three major media markets each day in order to get free time on these area's evening news shows. The focus was not on the voters at a rally; but on the media at a rally and the voters viewing the event some hours later.

There were other egregious examples of the effects of the Nixon attack on the media. It an attempt to balance their coverage of the Presidential campaign, the networks usually allocated equal time to each campaign. This meant a given amount of time to McGovern and an equal amount of time to Agnew. This was not equal and balanced coverage, but rather unequal and unbalanced coverage because McGovern and Agnew were not running for the same office. If the networks wanted to give equal time to the Republican Vice-Presidential candidate and the Democratic Presidential candidate; equal time to the Republican surrogate and the Democratic Vice-Presidential candidate, that was their affair; but they should not have disillusioned themselves that this represented equal or balanced coverage. Yet such was the fear inculcated into the networks over the course of the first Nixon Administration that they acted in this fashion.

Generals prepare to fight the last war and the media covers the last campaign. In 1968, the media were bamboozled into covering Nixon on closed circuit television. In 1972 the same thing happened except that Nixon never really campaigned nor did he subject himself to the same kind of scrutiny that McGovern did. There was a second double standard operating in the 1972 campaign. McGovern, due to his availability and much greater accessibility than Nixon, was subjected to exhaustive and probing questions while Nixon and his programs, to a large extent, escaped the critical eye of the nation's press corps.

The First Amendment states that "Congress shall make no law . . . abridging the freedom of the press." Historically, the courts have interpreted this to mean that not only can there be no prior restraint on publication, but there can also be no legal force applied to compel a reporter to divulge the source of his information. The Supreme Court ruling in the case of Earl Caldwell, a reporter for *The New York Times*, has struck down the hoary sanctity of the reporter-source confidentiality while maintaining the right of the press to publish that which it wishes to publish. However, once having published an item, courts may now compel the journalists to reveal their sources or else serve prison terms for contempt of court. This means that the only confidential relationships still respected by the courts are those of lawyer-client, clergyman-parishioner, and husband-wife. Given enough incentive, the Nixon Administration will probably find some pretext for demolishing these restraints on governmental power.

Returning again to the late Justice Black's concurring opinion in the Pentagon Papers case: "In seeking injunctions against these newspapers (i.e., *The New York Times* and *The Washington Post*) and its presentation to the court, the executive branch seems to have forgotten the essential purpose and history of the

First Amendment. When the Constitution was adopted, many people strongly opposed it because the document contained no bill of rights to safeguard certain basic freedoms. They especially feared that the new powers granted to a central government might be interpreted to permit the government to curtail freedom of religion, press, assembly, and speech. . . . The Bill of Rights changed the original Constitution into a new charter under which no branch of government could abridge the people's freedoms of press, speech, religion, and assembly."

"In the First Amendment the Founding Fathers gave the free press the protection it must have to fulfill its essential role in our democracy. The press was to serve the governed, not the governors. The Government's power to censor the press was abolished so that the press would remain forever free to censure the Government. The press was protected so that it could bare the secrets of government and inform the people."

The press is in need of a federal shield law which will make it unlawful for a court to compel a journalist to reveal his sources. Only if such a law is enacted, will sources be willing to reveal governmental machinations to the fourth branch of government.

Only if a free press is maintained, will the viability and integrity of this nation's political processes be maintained. It is the Nixon appointees to the Court who have encouraged this rampantly increasing trend toward governmental permissiveness by voting to force reporters to reveal their sources when subpoenaed. Sources will be much more reticent to speak to the media if they know that their confidentiality and anonymity will not be preserved.

The press must decide to eliminate those practices which have made journalism akin to theatre, to reform itself and to unceasingly strive to inform the people rather than to merely re-write press releases.

The American people must recognize the vital role a free press plays in keeping our society free; they must act decisively to strengthen the media against those who attack it for partisan purposes.

The Tech wishes to remind its readers that one week from today, December 15, we will end our regular semi-weekly publication schedule for 1972. During January, *The Tech* will be published once a week, on Wednesdays. With the beginning of the spring term in February, we will return to semi-weekly publication.

Continuous News Service

The Tech

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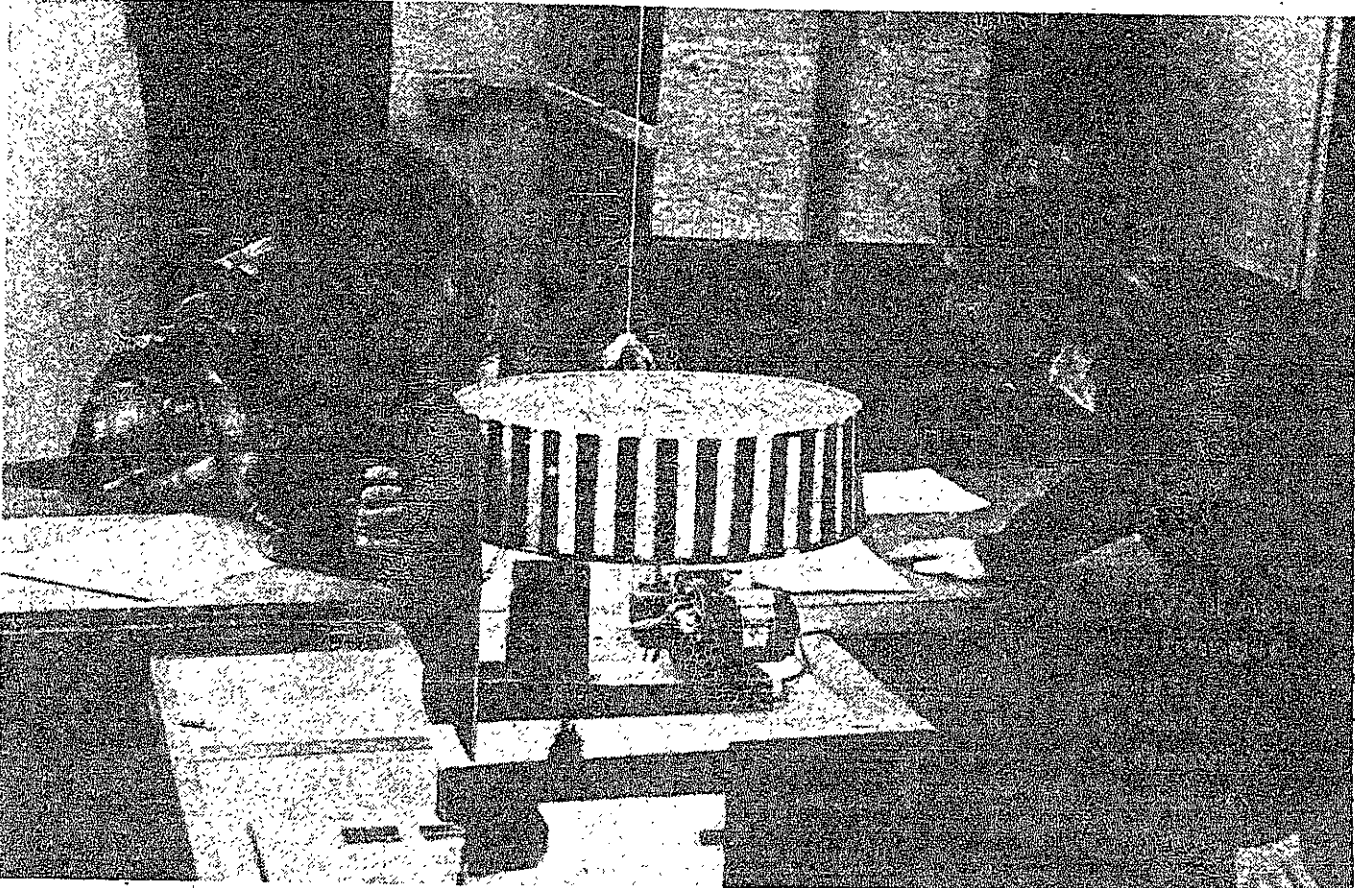
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December 8, 1972

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Committee views education



Two students from Keene State College run a psychology experiment in the ERC Perception Lab.

Photo by Roger Goldstein

(Continued from page 1)
plans have gone to the appropriate faculty committees for consideration. The courses, one to be offered on an undergraduate level, and one on a graduate level, will both deal with the fundamental problems of elementary education. The

graduate course will be more of a seminar, with direct study of the learning process in young children. Students taking the courses would receive general elective credit.

Martin expressed hope that international authorities could be obtained to lecture in these courses, and possibly remain at

the Institute for several days to give public lectures generally available for the MIT community.

The Colloquium subcommittee, under the chairmanship of Bailyn, has brought speakers to MIT every Wednesday. The topics covered have ranged from "Is Creativity A Proper Goal For Education?" given by Albert Rothenberg of Yale University, to this week's subject, "Specialization of the Human Brain for Language," delivered by Dr. Norman Geschwind from the Department of Neurology of Harvard Medical School. Other topics have been effects of experience on brain and behavior, universal higher education, biological causes of human behavior, and causation in teaching and resistance in learning.

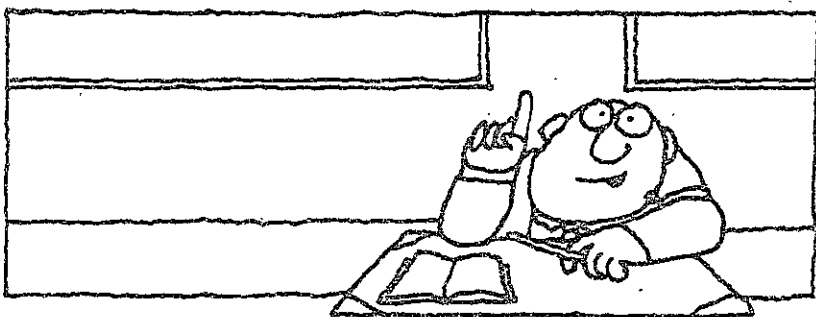
Members of the Steering Committee are: Martin, Bailyn, Davenport, Snyder, Pappert, Rogers, Richard M. Held, Professor of Experimental Psychology, Donald A. Schon, Professor of Urban Planning, and Jerrold R. Zacharias, Director of the Educational Research Center.

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A week ago a collision chewed up this car's rear-end, adding new body damage to the scrapes on the front fenders. This car still runs well (it's been driven for the past week), but it needs work. Should be perfect for the student with spare time this IAP to work on a car.

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Reception Following the Service
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The following article is excerpted from *On the Moon with Apollo 17* by Gene Simmons, former Chief Scientist of the Manned Spacecraft Center in Houston for two years and now a Professor of Geophysics at MIT. He has worked on the scientific aspects of the Apollo program since 1965 and is the principal investigator of the Apollo 17 surface electrical properties experiment. The Tech assumes responsibility for any inconsistencies that may have resulted from editing the material. —Editor

Introduction

The Apollo 17 mission to the Moon's surface, launched this Wednesday night, will land Monday afternoon in a beautiful valley nestled between two majestic mountains. The landing site is on the southeastern rim of the Sea of Serenity and is called Taurus-Littrow.

This final Apollo mission is the first one to carry a geologist for a first-hand study of the Moon. Jack Schmitt, the LM pilot, combines astronaut experience and ability with the scientific qualities and training of an excellent geologist. Gene Cernan, the Apollo 17 Commander, has an extensive background as a test pilot and an astronaut plus considerable training in geology and lunar science. Ron Evans, the CM pilot, also has studied geology and lunar science for many years, and has recently concentrated on the visual recognition and observation of geological features from great distances.

Since the first manned lunar landing, Apollo 11, in July 1969, significant improvements in both equipment and procedures have increased dramatically the capabilities of Apollo 17 over those of the first four missions. Total duration of the mission has increased to a planned time of about 12½ days and a maximum of 16 days. Actual time for the LM to remain on the lunar surface has doubled; it is now planned to be 75 hours. The amount of time spent by the astronauts on the lunar surface outside the LM, which has become known as Extra-Vehicular Activity or EVA, has more than doubled to a planned 21 hours. The EVA time will be spent in three periods of seven hours' duration. The weight of the scientific equipment that will be used in lunar orbit has increased from 250 pounds to 1050 pounds. The weight of the scientific equipment to be landed on the lunar surface has increased from 510 pounds to about 1200 pounds. And finally, the astronauts will have with them for the third time a small, four-

wheeled vehicle for travel over the Moon's surface. It is termed Rover and can carry two astronauts, equipment, and rocks.

Landing site description

The Apollo 17 landing area, termed Taurus-Littrow, lies in the northeastern sector of the Moon (latitude 20° 09' 50" N., longitude 30° 44' 58" E.). For this landing, we have selected a valley nestled between two very large mountains.

The dark areas as seen from earth, called maria, were visited on Apollo 11, 12, and 14. Then on Apollo 15, we landed just at the edge of a dark area and during the exploration that followed climbed part way up the initial slopes of the Apennine Mountains, a light area. And finally on Apollo 16, we landed in a large highlands region.

Surface features

Several major surface features of special interest occur at the Apollo 17 site. These include a thin regolith; several faults; a long, steep, east-facing cliff (geologically, scarp) and several craters. All of these features are readily apparent in the photographs of the region.

Regolith. An unusually thin regolith, the outer layer of soil and loose rock that has been churned up by meteorites, is expected at the Apollo 17 landing site. We see no evidence of mixing of the light mantle material, the dark mantle material, or the units below them. Indeed, the study of small craters shown in Apollo 15 orbital photographs of the Taurus-Littrow area suggest that the thickness of the regolith may be much less than one m and probably only 3-30 cm. At other landing sites, we have found greater thicknesses, ranging from three to 14 m. For example, the regolith at the Apollo 14 site was about eight m thick.

Scarp. A very prominent, apparently young, east-facing scarp, or cliff, crosses the floor of the valley about five km west of the landing point. It continues into the North Massif and probably extends much farther. In the valley, heights as great as 80 m occur along the scarp. On orbital photographs, the scarp appears to be covered by a veneer of the light mantle material. From our experience on Earth with such features, we believe that the scarp is the surface expression of a geologic fault that extends to considerable depth in the Moon. Rocks that have been uplifted by the fault may be exposed in the face of the scarp. Samples collected from the base of the scarp may possibly include samples of these rocks derived from the entire 80 m. Obviously, high resolution photographs of the scarp face taken by the Apollo 17 astro-

nauts from the surface of the Moon would be very useful later for "restoring" the samples to their correct position on the face of the scarp.

Faults. A fault is the geological term for the surface along which a break has occurred in rocks. The rocks that were at one time continuous across the fault have been broken and physically moved into positions where they are no longer continuous. We believe that the prominent scarp at Taurus-Littrow is the surface expression of one fault. We believe that several other faults are also present. It is rather likely that the sides of the valley are bounded by faults.

Surface science activities

Each of the two astronauts that descend to the lunar surface in the LM will spend about 21 hours in three periods of seven hours outside the LM working on the lunar surface. Most of that time will be used to study geological features, collect and document samples of rocks and soil, and set up several experiments that will be left behind on the lunar surface when the astronauts return to Earth.

Lunar surface experiments

Apollo Lunar Surface Experiments Package (ALSEP): The ALSEP central station, although not an experiment, provides radio communications with the Earth and a means for control of the various experiments. After the ALSEP is set up, it is quickly checked out from Earth and then after the astronauts leave the Moon, commands continue to be sent from Earth for control of the various experiments during the lifetime of the ALSEP. The experiments connected electrically to the central station are the Heat Flow Experiment, the Lunar Surface Gravimeter, the Lunar Atmospheric Composition Experiment, the Lunar Ejecta and Meteorite Experiment, and the Lunar Seismic Profiling Experiment.

Heat Flow Experiment (HFE): We are certain that the interior of the Moon is warm. It may be hot, possibly as hot as 1200° C. Therefore heat flows from the interior of the Moon to the surface where it is then lost into cold space by radiation. The HFE will measure the amount of heat flowing to the surface at the Taurus-Littrow site.

The HFE has been designed to measure the rate of heat loss from the interior of the Moon. To obtain this measurement at the 17-site, two holes are to be drilled into the surface of the

Moon by one of the astronauts to a depth of about eight feet by means of the drill. After each hole is drilled, the probes are placed in the holes. The probes contain very precise temperature sensors (platinum resistance thermometers) for the lower parts of the holes. The connecting cables contain several thermo-couples (which also measure temperatures but with lower precision) which will be located in the upper portions of the holes. The thermal properties of the rocks will be measured by the equipment that is placed in the hole; they will also be measured on samples that are returned to the Earth.

The HFE is important because knowledge of the rate of heat flow lets us set limits on the internal temperature and on the amount of radioactive elements now present in the Moon. You see, the amount of such radioactive material already measured in the lunar samples on Earth is embarrassingly high. We know that such samples cannot be representative of the whole Moon, because if they were, then the Moon's interior would be molten throughout. Yet we are sure that it is mostly solid throughout. By establishing limits on the radioactivity, we will come closer to a correct understanding of the thermal history of the Moon.

Incidentally, the value of heat flow measured at the 15-site was completely unexpected. It was at least twice the value that most scientists had anticipated. We are particularly anxious to see if the Apollo 17 measurements confirm this surprising result.

Lunar Surface Gravimeter (LSG): When masses are accelerated, they should radiate gravitational waves, as predicted by the general theory of relativity. Efforts to confirm the existence of gravitational waves have been successful only recently. Dr. Joseph Weber has detected gravitational waves that pass through the Earth and come from the direction of the center of our galaxy. I must say that many knowledgeable scientists would disagree today with the view that gravitational waves have now been detected.

The primary purpose of the LSG is to search for the presence of propagating gravitational waves in space. Such waves should interact with both the Moon and the Earth in certain diagnostic ways. In effect, the LSG experiment will use both the Moon and the Earth as gravitational antennas.

Lunar Atmospheric Composition Experiment (LACE): In this experiment we measure with a mass spectrometer the composition and density of gas molecules in the thin lunar atmosphere.

Lunar Ejecta and Meteorites Experiment (LEAM): This experiment is designed to measure the direction of travel, speed, and mass of micrometeorites arriving at the surface of the Moon. A second major objective of the experiment is to measure similar properties of any lunar particles that are ejected from the Moon by large meteorite impacts.

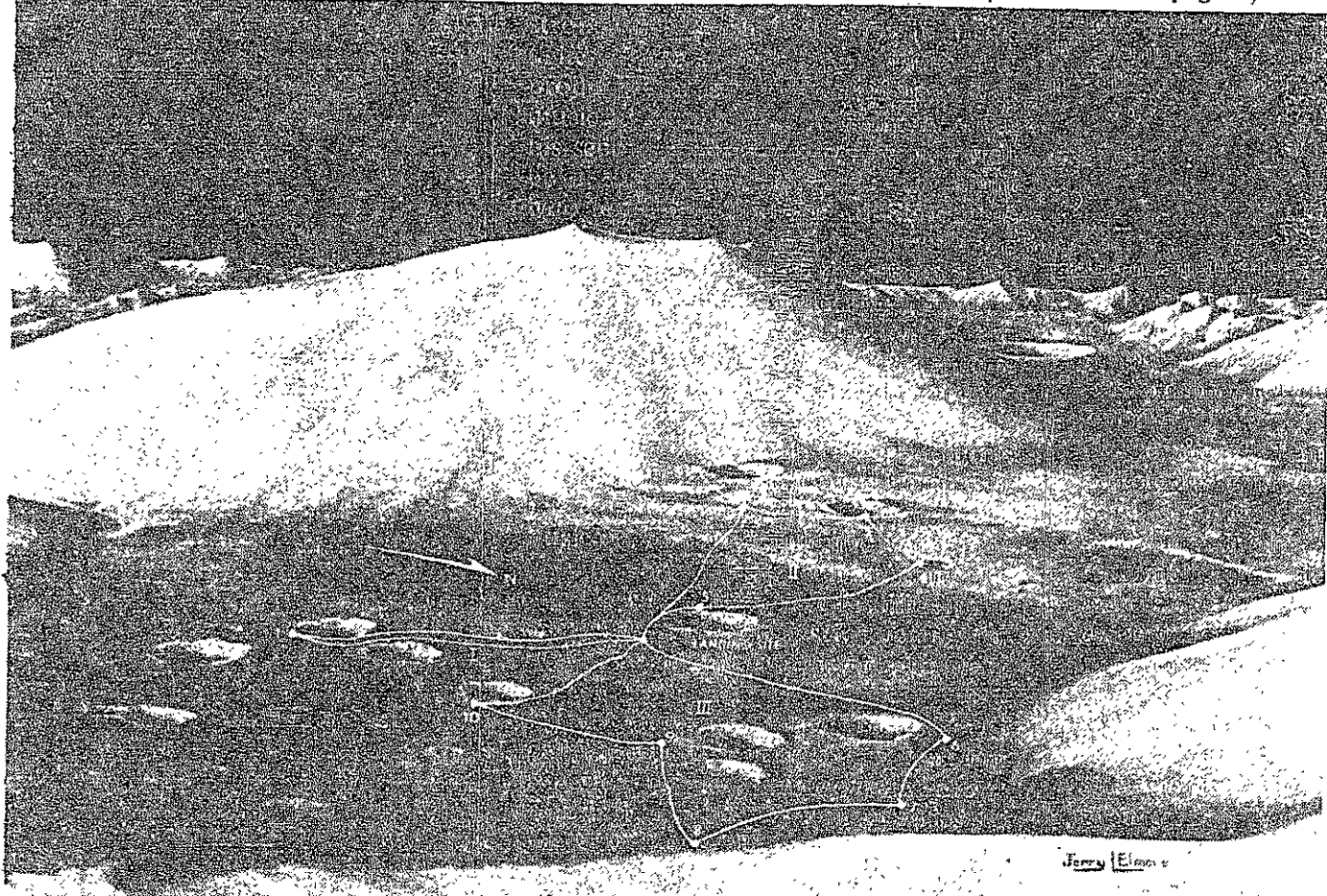
Lunar Seismic Profiling Experiment (LSP): The LSP is similar in principle to previous seismic experiments flown to the Moon but greatly different in design. From analysis of the data we should detect any layers of rock beneath the surface of the Moon (to depths of one km), measure the depths to them, and determine the velocity of sound in the rocks. Because sound waves travel with different velocity in different kinds of rocks, we can even infer the kinds of rock present in the subsurface.



Mission commander Gene Cernan

Lunar Geology Experiment (LGE): Most of the time spent by the surface astronauts during the three EVA's will be devoted to investigating various geologic features at the landing site and to collecting samples of rocks. Many detailed photographs will be obtained to supplement the verbal descriptions by the astronauts. Samples of the rocks present at the site will be bagged and brought back to Earth. The astronauts will use several individual pieces of equipment to help them with their tasks.

Lunar geologists have as their goal the reading of the historical (Continued on page 7)



The traverses of the Lunar Rover are shown on this drawing of the landing site. The numerals indicate the order of the EVAs.

Photos courtesy of Gene Simmons and NASA

experiments include **ALSEP, SEP, HFE**

(Continued from page 6)

record of the Moon for the past five billion years. That record has been preserved in the lunar rocks. One part of it is seen in the shape of the outer surface of the Moon. Another part is present in the distribution of different kinds of rocks over the surface of the Moon. And still a third part is given by the nature of the lunar interior. At the Taurus-Littrow site, we plan to study thoroughly several features. Rocks produced by the event that caused the Serenitatis Basin will surely be present. They should provide the information needed to read an important chapter in lunar history. Many samples will be collected at the landing site.

After the samples reach Earth, they will be studied extensively by nearly eight hundred scientists all over the world. The minerals present in them will be identified. The ages of the rocks will be read from their built-in radioactive clocks. Such physical properties as thermal expansion, velocity of sound waves, electrical conductivity, and many others will be measured. The value of all these measurements is greatly increased by knowing the geologic setting of the rocks.

Observations made on the lunar surface of the various geological features are very important. The TV camera allows us on Earth to follow the astronauts and to "see" some of the same features, though not nearly so well as the astronauts see them.

Soil Mechanics Experiment (SME): The mechanical properties of the lunar soil are important for both engineering and scientific reasons. Future design of spacecraft, surface vehicles and shelters for use on the Moon will be based, in part at least, on the data collected in the soil

mechanics experiment of this mission. From previous missions we have learned that the mechanical properties are generally similar to those of terrestrial soils of comparable particle size. Indeed, the distributions of particle sizes and particle shapes, together with the density of the soil seems to control the physical properties. Densities of soil on the Moon range from 1.0 to 2.0 gm/cc, even though the individual particles average about 3 gm/cc. The porosity (the fraction of open spaces in the soil) of the outer few cm of soil averages about 40 percent at the previous sites. The strength of the soil varies from two to 20 pounds per square foot.

On Apollo 17, no special equipment for the SME will be carried to the Moon. This experiment is completely passive and the data will be obtained indirectly from observations and photographs made during the performance of other experiments. The astronauts have been alerted to watch specifically for such features as layering in the soil, surface patterns, slight changes in color, and the presence of fillets (the accumulation of soil against boulders).

Lunar Traverse Gravimeter Experiment (LTG): In a general way, large variations in the value of gravity at Taurus-Littrow will suggest "lumpiness" in the shallow part of the lunar crust, whereas small variations of gravity will favor ideas of uniform horizontal layering to great depth.

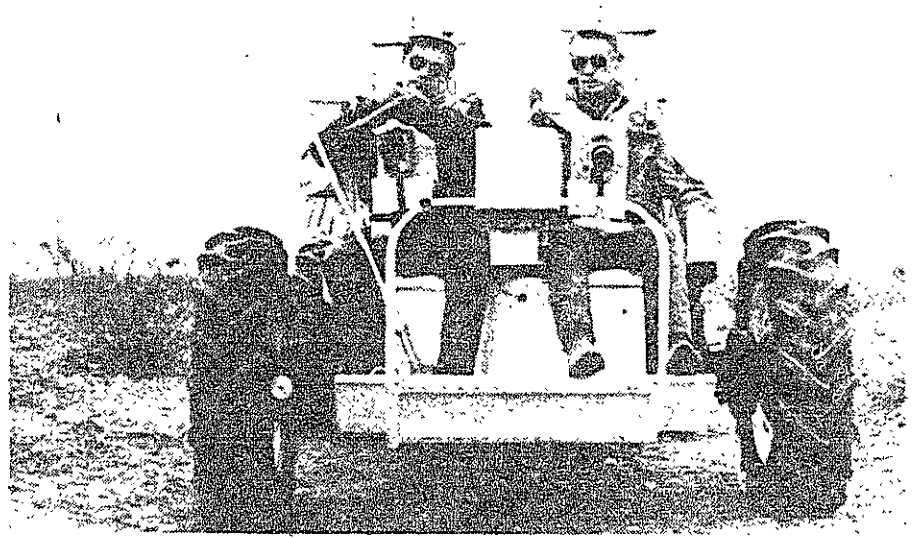
Surface Electrical Properties Experiment (SEP): SEP uses radio waves to "see" down into the Moon. We may be able to see into the Moon as deeply as a few kilometers. Several colleagues and I have worked on this experiment for several years in anticipation of using it on the Moon. It is an entirely new

experiment and has never been used for the exploration of the Earth.

With SEP, we will look for layering in Taurus-Littrow's rocks and soils. We will look for large boulders that are completely buried and cannot be seen by the astronauts. We will even look for water in the subsurface — though we do not expect to find any. Our experiment will be carried on the traverses of the second and third EVA's.

Orbital science activities

At each landing site on the surface of the Moon, the astronauts' activities are limited to distances of a few miles. In comparison with the total area of the surface of the Moon, the regions explored by the astronauts on foot or with the Rover are miniscule. They are frequently referred to as "point" samples. The desirability of extending our observations to larger areas is obvious. Indeed, several things can be done in orbit around the Moon that will allow us to extrapolate from the data obtained on the surface to the rest of the Moon. One of these things is photography; many



Cernan and civilian geologist Harrison (Jack) Schmidt, LM pilot, ride a training model of Rover.

photographs have been obtained from the command module on each of the previous Apollo missions.

The total coverage for these three missions will exceed 20 percent of the Moon's surface for several of the orbital experiments and will exceed five percent for each of them.

Although some photographic tasks will be done in the CM, most of the experiments for the orbital science will be done with

equipment located in the SM. The various orbital experiments include the following — Lunar Sounder, Infrared Scanning Radiometer, Far Ultraviolet Spectrometer, and S-Band Transponder. Only the S-Band Transponder has been flown before. The other three experiments are new. The equipment for the orbital science experiments are all housed in a section that is termed scientific instrument module (acronym SIM).

9 MIXER

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SPORTS

Wrestling coach wins 100th

A very memorable event took place Wednesday as MIT's wrestling team trounced the University of New Hampshire 45-6, and Coach Wil Chassey chalked up his 100th victory.

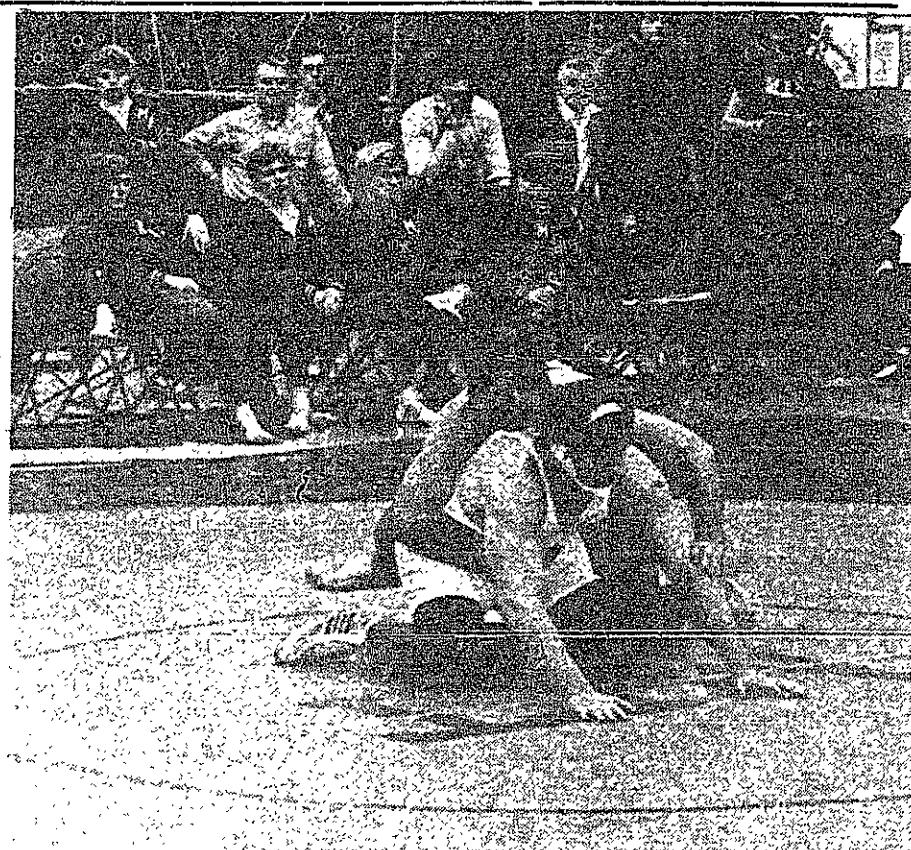
In the past eleven years as wrestling coach, Chassey has never had a losing season. This is a remarkable feat considering the rapidly changing attitudes among wrestlers over the last decade, which indicates that Chassey has had to alter his approach to the sport too. MIT's academic demands and the total commitment wrestling requires have clashed as never before, and it takes an understanding and sympathetic coach to resolve this dilemma.

Coach Chassey has been able to do this with scores of wrestlers over the years, yet there has always been a dearth of wrestlers at practices and the resulting lack of depth has often been critical; yet Chassey has been able to mold even these teams into winners. In a time when most New England colleges are heavily recruiting wrestlers and MIT is not, Wil Chassey should be commended for his exceptional coaching abilities.

The grapplers got off to a good start as Ed Hanley '74 (118 lbs.) coolly outwrestled his man 13-7, and Jon Backlund '73 (126 lbs., co-captain) pinned his opponent with three seconds left in his match. Both worked hard throughout their matches, an important psychological boost for the rest of the team. Unfortunately, freshman Roger McKee could not withstand the strength and experience of UNH's co-captain at 134 lbs. and was subsequently pinned giving UNH its only points. Surprise stand-out freshman Joe Arthur (142 lbs.) pinned his man in 4:51. Then at 150, Rich Hartman '74 decisively defeated his man 13-7.

The remaining grapplers were by then well psyched to pin the next three opponents. Co-captain Dave Kuentz '73 (158 lbs.) gave MIT six points in 4:13; Fred Linderman '74 (167 lbs.), coming off a couple of injuries, added six more in 3:25; and Dave Seibolt '73 (177 lbs.) in 4:47. Dave Grasso, a promising sophomore at 190 lbs., won impressively 6-1. And to top off the meet, Erland van Lidde de Jeude '75 used a bear-hug to upset and pin a very good UNH heavyweight.

This impressive victory will be helpful to the team as they prepare for a home meet against Wesleyan on Saturday, December 9 at 3:30 pm.



Coach Chassey, second from the left in the upper row, is shown watching David Grosso '75 in the meet against Boston University on November 29.
Photo by Chris Cullen

INTRAMURAL COUNCIL MEETING

Monday - December 11, 1972
7:30 pm

Varsity Club Lounge

Elections: Manager of Squash and Water Polo

Notice: The motion in regard to Community Hockey League players did not actually carry by 3/5. This may require a revote. However, it is in effect at the present time.

Amendments to Constitution

1. Approval of Westgate II as a dormitory with voting membership (Article 4, Section C)
2. Article 4, Section A, No. 5: Addition of a voting representative from the Graduate Student Council to represent off-campus graduate students.

AFTER THE FALL by Arthur Miller

Dec. 7, 8, 9 & 13, 14, 15, 16, 1972
KRESGE-LITTLE THEATER
8:00 p.m. \$2.50
RESERVATIONS: 253-4720
mit student rates in Bldg. 10
the MIT Community Players

Hockey drops season opener

By Dan Gantt

The MIT varsity ice hockey team, attempting to rebound from last year's disappointing 2-12 campaign, opened the '72-'73 season with a 7-2 loss at Trinity.

Tech's inability to match Trinity's goal production was certainly not due to a lack of opportunities. In fact, MIT outshot the home team 38-30. Furthermore, Tech failed to take advantage of any of numerous power plays resulting from nine Trinity penalties.

While falling behind 2-0 early in the first period, MIT did show good hustle and a noticeable

improvement over last year's team. A goal by Rob Hunter '73, assisted by George Kenney '74, moved the Engineers to within one point at 17:44 of the period, and gave rise to much optimism.

However, the second period was all Trinity as they upped their lead to 4-1. Two third period goals followed before MIT again hit the scoreboard on a shot by Ian Fisher '74. Hunter and Tom Lydon '73 picked up

assists. A final Trinity goal at 14:10 completed the rout.

It is obvious that the front line is going to have to find the key to putting the puck in the net for MIT to have a successful hockey season. Much improvement is also needed around the goal as one of every four Trinity shots evaded Tech's goalie. One game does not a season make, however, and hopefully improvement will come as the season progresses.

ON DECK

Friday
Fencing (V) - Brooklyn College, away, 7pm
Squash (V) - Navy, home, 7pm

Saturday
Basketball (V&F) - Trinity, away, 6pm
Fencing (V) - Brooklyn Polytechnic Institute, away, 2pm
Fencing (JV&F) - Concord High School, home, 2pm
Gymnastics (V) - Lowell Tech, away, 2pm
Hockey (V) - Wesleyan, away, 2pm
Hockey (JV&F) - Brooks School, home, 2pm
Pistol (V) - Newark, John Jay, at Merchant Marine
Rifle (V) - Brown, away
Squash (V&F) - Wesleyan, home, 2pm
Swimming (V) - Springfield, away, 2pm

Monday
Basketball (V) - Bowdin, home, 8:15pm
Basketball (F) - Bowdin, home, 6:15pm

- BELL BOTTOMS
- LEVI'S
- LEE'S
- WRANGLER'S

Central War Surplus

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Central Sq, Cambridge

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Friday, December 8, 1972

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10 AM - 3 PM on Saturday
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